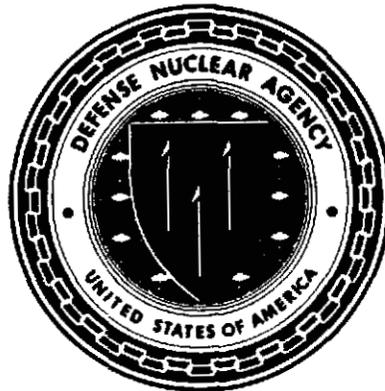


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SHOTS ESS THROUGH MET AND SHOT ZUCCHINI

The Final TEAPOT Tests

23 March 1955-15 May 1955



HRE-0582

United States Atmospheric Nuclear Weapons Tests
Nuclear Test Personnel Review

Prepared by the Defense Nuclear Agency as Executive Agency
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This report describes the activities of DOD personnel, both military and civilian, in Shots ESS, HADR, APPLE 1, WASP PRIME, HA, POST, MET, and ZUCCHINI, the latter eight events of the TEAPOT atmospheric nuclear weapons test series. Shot APPLE 2, the next to the last TEAPOT test event, is described in a separate volume. These tests were conducted from March 23 to May 15, 1955 and involved participants from Exercise Desert Rock VI, AFSWP, AFSWC, AEC nuclear weapons development laboratories, and the Civil Effects Test Group. This volume also describes the radiological safety activities undertaken at each shot.		

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PREFACE

Between 1945 and 1962, the United States Government, through the Manhattan Engineer District and its successor agency, the Atomic Energy Commission (AEC), conducted 235 atmospheric nuclear weapons tests at sites in the southwestern U.S. and in the Pacific and Atlantic Oceans. In all, an estimated 220,000 Department of Defense (DOD) participants, both military and civilian, were present at the tests. Approximately 90,000 of these participants were present at the nuclear weapons tests conducted at the Nevada Test Site (NTS), northwest of Las Vegas, Nevada.

In 1977, 15 years after the last above-ground weapons test, the Center for Disease Control* noted a possible leukemia cluster among a small group of soldiers present at Shot SMOKY, the 15th weapons-related test of Operation PLUMBBOB, the series of atmospheric nuclear weapons tests conducted in 1957. Since that initial report by the Center for Disease Control, the Veterans Administration has received a number of claims for medical benefits from former military personnel who believe their health may have been affected by their participation in the atmospheric nuclear weapons tests.

In late 1977, DOD began a study that provided data to both the Center for Disease Control and the Veterans Administration on possible exposures to ionizing radiation among its military and civilian personnel who participated in the atmospheric nuclear weapons tests 15 to 30 years earlier. The Department of Defense organized an effort to:

- Identify DOD personnel who had taken part in the atmospheric nuclear weapons tests

*The Center for Disease Control, part of the U.S. Department of Health and Human Services (formerly the U.S. Department of Health, Education, and Welfare).

- Determine the extent of the participants' exposure to ionizing radiation
- Provide public disclosure of information concerning participation by DOD personnel in the atmospheric nuclear weapons tests.

This report on seven nuclear tests of Operation TEAPOT is based on the historical record of military and technical documents associated with each of the nuclear weapons tests. These reports provide a public record of the activities and possible radiation exposure of DOD personnel, for ongoing public health research and policy analysis.

Many of the documents pertaining specifically to DOD involvement during these seven shots of Operation TEAPOT were found in the Defense Nuclear Agency Technical Library, the National Federal Archives Record Center, the Department of Energy Nevada Operations Office, the Los Alamos National Laboratory* Technical Library, and the Modern Military Branch of the National Archives.

Commonly, the surviving historical documentation of activities conducted at Shots ESS, APPLE 1, WASP PRIME, HA, POST, MET, and ZUCCHINI addresses test specifications and technical information, rather than the personnel data critical to the study undertaken by the Defense Nuclear Agency. Moreover, instances have arisen in which available historical documentation has revealed inconsistencies in vital factual data, such as the number of DOD participants in a certain project at a given shot or their locations and assignments at a given time. These inconsistencies in data usually occur between two or more documents, but occasionally appear within the same document. Efforts have been made to resolve these data inconsistencies wherever possible, or to otherwise bring them to the attention of the reader.

*Formerly the Los Alamos Scientific Laboratory (LASL)

An important example of such discrepancies is the documentation dealing with air operations at Operation TEAPOT. Several postshot and post-series documents were analyzed to determine the nature and extent of these air activities, including Parsons' Operational Summary (WT-1158) and Fackler's Technical Air Operations (WT-1206). The Operational Summary provides an overview of all activities conducted during the testing, primarily those of AFSWP. Technical Air Operations, however, is a more specific document, chronicling in detail the air operations of DOD personnel. Discrepancies as to numbers of aircraft actually participating in any single event exist between these two documents and other TEAPOT documents. When possible, these discrepancies were resolved through additional research. In those cases for which further research failed to resolve the problem, the Technical Air Operations report, WT-1206, was used because it deals specifically with air operations at TEAPOT and therefore is considered the more reliable document for determining the extent and nature of air operations.

For several of the Desert Rock VI and Joint Test Organization (JTO) projects discussed in the TEAPOT volumes, the only historical documents available are the Sixth Army's Desert Rock VI Operations Orders and the Test Director's schedule of events from "Operation Order 1-55." These sources detail the plans developed by DOD and AEC personnel prior to the TEAPOT Series; they do not describe the projects as conducted at the NTS. After-action documents, such as the "Final Report of Operations for Exercise Desert Rock VI" and the Weapons Tests Reports for AFSWP, summarize the projects performed during the TEAPOT Series, but do not always supply shot-specific information. Therefore, it is not known if all of the projects addressed in the planning documents and discussed in this volume were conducted exactly as planned.

ORGANIZATION AND CONTENT OF TEAPOT SERIES REPORTS

This volume details participation by DOD personnel in seven of the last eight events of the Operation TEAPOT nuclear weapons testing series. Four other publications address DOD activities during the TEAPOT Series:

- Series Volume: Operation TEAPOT, Atmospheric Nuclear Weapons Tests, 1955
- Multi-shot Volume: Shots WASP to HORNET, the First Five TEAPOT Tests
- Shot Volume: Shot BEE
- Shot Volume: Shot APPLE 2.

The volumes addressing the test events of Operation TEAPOT have been designed for use with one another. The Series volume contains information that applies to those dimensions of Operation TEAPOT that transcend specific events, such as historical background, organizational relationships, and radiological safety procedures. In addition, the TEAPOT Series volume contains a bibliography of works consulted in the preparation of all five Operation TEAPOT reports. The two single-shot volumes describe DOD participation in Shots BEE and APPLE 2. These two events have been bound separately because they included significant Exercise Desert Rock maneuvers involving large numbers of DOD personnel. Each multi-shot volume combines shot-specific descriptions for several nuclear events. The shot and multi-shot volumes contain reference lists only of the sources referenced in each text. Descriptions of activities concerning any particular shot in the TEAPOT Series, whether the shot is addressed in a single-shot volume or in a multi-shot volume, should be supplemented by the general, organizational, and radiological safety information contained in the TEAPOT Series volume.

The information in these reports is supplemented by the Reference Manual: Background Materials for the CONUS Volumes, which contains summary information on radiation physics,

radiation health concepts, exposure criteria, and measurement techniques, as well as a list of acronyms and a glossary of terms used in the Nuclear Test Personnel Review reports addressing test events in the continental U.S.

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